# TWO NEW ANAMORPHS OF *MYCOSPHAERELLA* ASSOCIATED WITH FOLIAR LESIONS OF *EUCALYPTUS DUNNII*

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## INTRODUCTION

*Eucalyptus dunnii* is a fast growing eucalypt species that has recently been propagated in plantations in southern Queensland. *Mycosphaerella* species and their anamorphs are commonly associated with foliar lesions in these plantations. *Mycosphaerella* is a diverse genera that has been studied extensively on *Eucalyptus*. It is likely that there are many undescribed species (1).

Two new species of fungi have been isolated from foliar lesions of *E. dunnii*. Sporocarps were originally isolated from the same lesions and then later separately on other hosts. In this paper, descriptions of the species are presented and their co-existing relationship as pathogens is discussed.

## MATERIALS AND METHODS

**Symptoms and Isolation** Foliage of *Eucalyptus dunnii* was collected in May 2004. Sporocarps of each species were examined and streaked onto 2% malt extract agar and incubated at 25 C°.

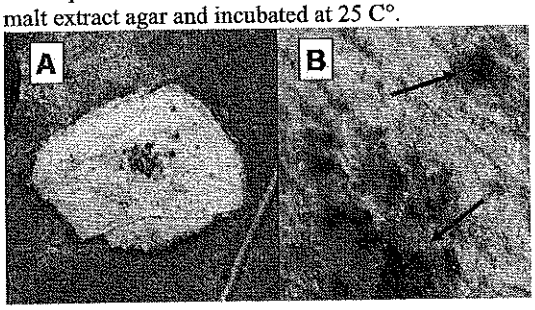


**Figure 1. (A) typical lesion (B) one species has larger, solitary acervuli. For the other species the sporocarps are pycnidial and gregarious.**

**Phylogeny**. The entire ITS1-5.8S-ITS2 region of the rDNA of isolates of each species were amplified by PCR and sequenced. Resulting sequences were compared with Genbank sequences using a blast search and aligned with most closely related species.

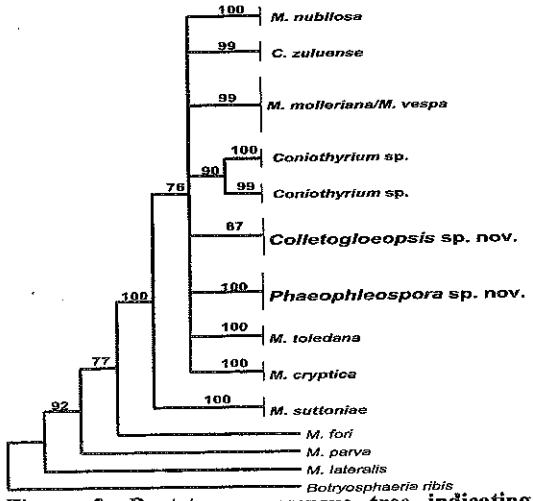


**Figure 2. Bootstrap consensus tree indicating relationship between the new species and closely related species. The tree is rooted to *Botryosphaeria ribis*.**

**Classical taxonomy** The conidia and conidiogenesis of each species was examined *in vivo* and *in vitro* at high magnification and described. The spores produced in culture are larger and more elongate than those produced on foliage in fruiting bodies.

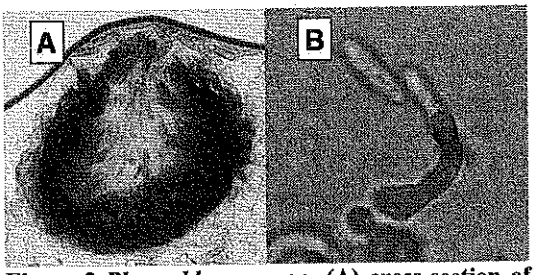


**Figure 3 *Phaeophleospora* sp. (A) cross-section of pycnidium (B) conidiogenous cell and conidia.**

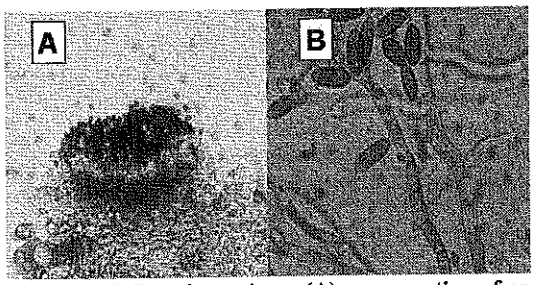


**Figure 4 *Colletogloeopsis* sp. (A) cross section of an acervulus and (B) mycelia producing conidia.**

## DISCUSSION

When foliage of *E. dunnii* was first examined, sporocarps of both the *Phaeophleospora* sp. and the *Colletogloeopsis* sp. were found co-occuring on lesions. The pycnidia of the *Phaeophleospora* sp. were associated with every lesion whilst the acervuli of the *Colletogloeopsis* sp. occurred on fewer lesions. It was therefore hypothesized that the *Phaeophleospora* sp. is the primary pathogen and the Colletogloeopsis sp. is secondary. The two species were later found co-occuring on foliage *E. grandis* , providing support for this hypothesis.

However, the *Colletogloeopsis* sp. was later isolated from foliage of *E. globulus* in the absence of the *Phaeophleospora* sp. Research is required to determine the pathogenicity of these species.

## ACKNOWLEDGEMENTS

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## REFERENCES

1. Crous P.W. (1998) '*Mycosphaerella* spp. and their anamorphs associated with leaf spot diseases of *Eucalyptus*.' (The American Phytopathological Society: St. Paul, Minnesota, USA)